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yiaX2 MNITSNSTTKD--IPRQRWLRIIPPILITCIISYMDRVNIAFAMPGGMDA
 prmA MQ-----KSQPGTRWFRIIVPILIA CIMSFMDRVNISFALPGGMEQ
 PE6 MNTASVSVTQSQAIPKLRWLRIVPPILITCIISYMDRVNIAFAMPGGMDD
 PK1 MNSST-----N-ATKRWWYIMPIVFITYSLAYLDRANFSFASAAGITE
 prmB MNTSR-----KLPVKRWWYLMPIVFITYSLAYLDRANYGFAAASGIEA
 PE1 MNSST-----N-ATKRWWYIMPIVFITYSLAYLDRANFSFASAAGITE
 * * * * *

yiaX2 DLGISATMAGLAGGIFFIGYLEFLQVPGGKIAVHSGGKFIGWSLVAWAVI
 prmA DLLMSSQMAGVVSGIFFIGYLEFLQVPGGHI AVRGSGKRFI AWSLVAWAVV
 PE6 ELGITASMAGLAGGIFFIGYLEFLQVPGGKLAVYGNKGKFIGWSLLAWAVI
 PK1 DLGITKGISSLLGALFFFLGYFFFQIPGAIYAERRSVRKLIFICLILWGAC
 prmB DLGISRGTSSLIGALFFFLGYFIFQVPGAIYAVKRSVRKLVFTSLLLWGFC
 PE1 DLGITKGISSLLGALFFFLGYFFFQIPGAIYAERRSVRKLIFICLILWGAC
 * * * * *

yiaX2 SVLT-GLITNQYQLLALRFLLGVAEGGMLPVVLT MISNWFPDAERGRANA
 prmA SVAT-GFVTHQYQLLILRFALGVSEGGMLPVVLT MVSNWFPPEKELGRANA
 PE6 SVLT-GLVTNQYQLLFLRFALGRFRSGMLRWVLT MISNWFPDKERGRANA
 PK1 ASLDRDGAQYSRAGRAIRFILGVVEAAVMPAMLIYISNWFTK SERSRANT
 prmB AA-ATGLISNIPALMVIRFVLGVVEAAVMPAMLIYISNWFTROERSRANT
 PE1 ASLDRDGAQYSSAGWRSVLFSAVVEAAVMPAMLIYISNWFTK SERSRANT
 * * *

yiaX2 IVIMFVPIAGIITAPLSGWIIITVLDWRWLFIEGLLSLVVLVLWAYTIYD
 prmA FVMFAPLGGMITAPVSGWIIALLDWRWLFIEGLLSVVVLAVWWLMVSD
 PE6 IVIMFVPIAGILTAPLSGWIIITAWDWRMLFLVEGALS LVVMVLWYFTISN
 PK1 FLILGNPVTVLWMSVVS GYLIQAFGWREMFIIEGVP AVIWAFCWWVLVKD
 prmB FLVLGNPVTVLWMSIVSGYLINAFGWREMFIIEGVP ALIWAIFWWFIVRD
 PE1 FLILGNPVTVLWMSVVS GYLIQSFGWREMFIIEGVP AVLWAF CWWVLVKV
 * * * *

yiaX2 RPQEARWISEAEKRYLVETLAEQKAIAG-TEVKNASLSAVLSDKTMWQL
 prmA RPEDARWLPAAREYLLREMA RDKAERSKLPPISHAPLQEVFHN PGLMKL
 PE6 RPQEA KRISQA EKDYLIKTLHDEQLLIKG-KTVRNASLRRLGDKIMWK-
 PK1 KPSQVNWLAESEKAALQEQLEREQQGIKPVRNYGEA-----FRSRNVLL
 prmB KPEQVSWLTETEKQQLASAMAEQQQAIPPMRNVPQA-----LRSRNVVL
 PE1 KPSQVNWLS ENEKAALQAQLESEQQGIKAVRNYGEA-----FRSRNVILL
 * * * *

FIG. 1A

Fermentative Production of 2-KLG

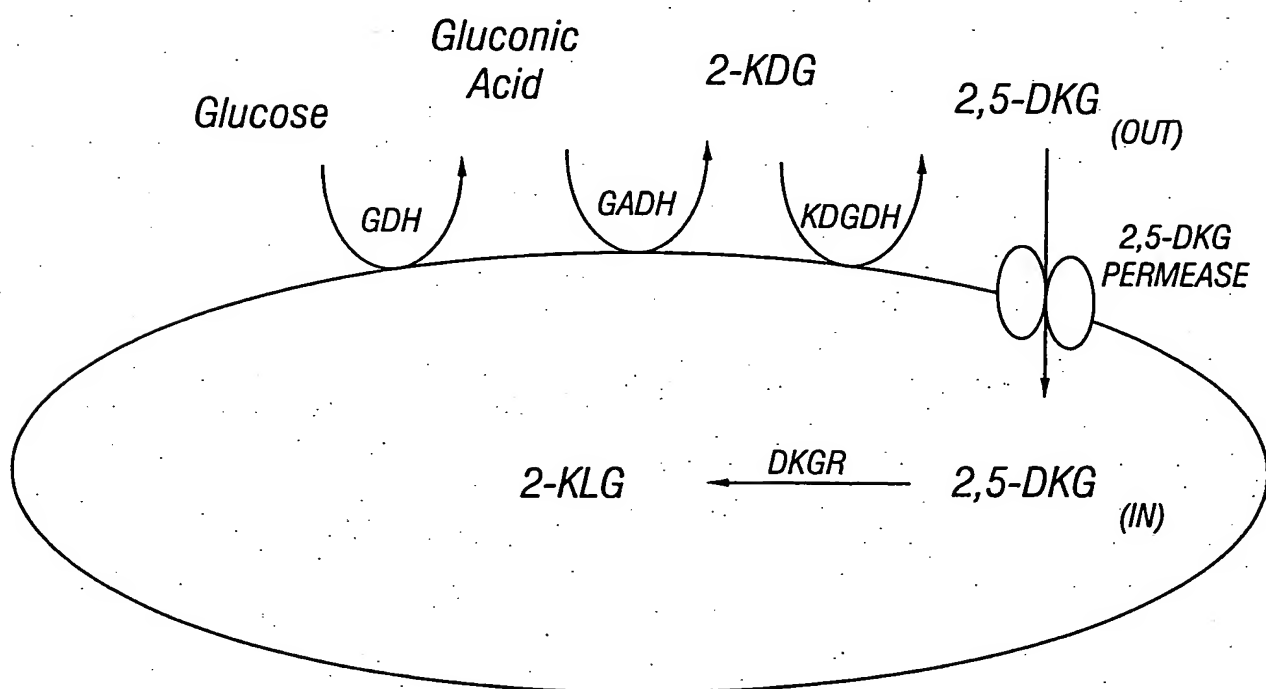


FIG. 2

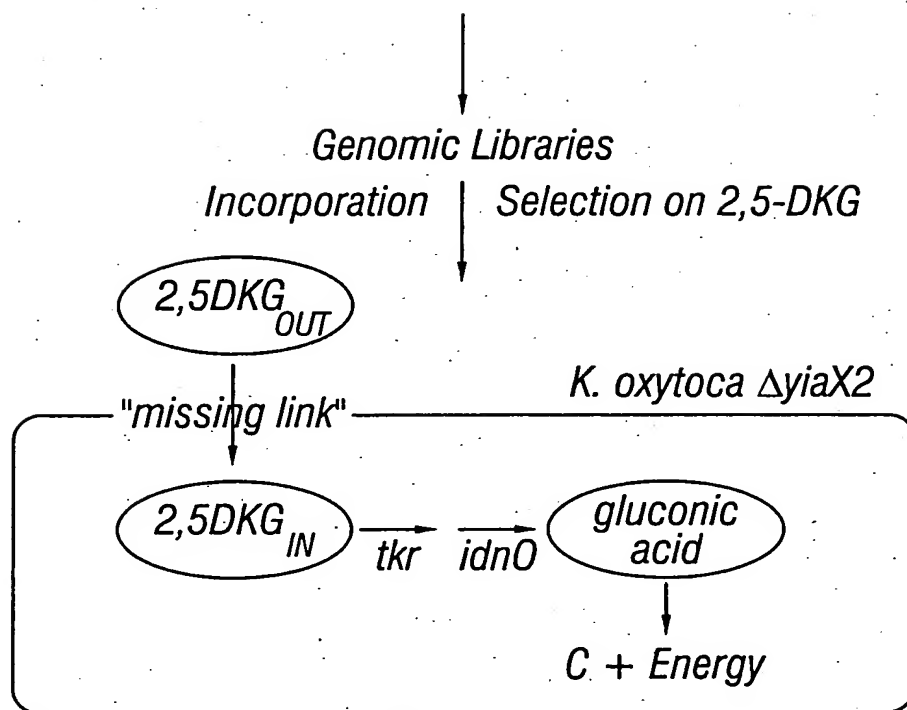


FIG. 3